DECISION RECORD
AND
FINDING OF NO SIGNIFICANT IMPACT
ON THE
FIDELITY EXPLORATION AND PRODUCTION COMPANY
TONGUE RIVER – BADGER HILLS PROJECT
PLAN OF DEVELOPMENT

SUMMARY OF THE PROPOSAL

Fidelity Exploration & Production Company (Fidelity) proposes to develop coal bed natural gas (CBNG) in its Tongue River-Badger Hills project area located in Big Horn County of southeastern Montana. The proposal is located in T. 9 S., R. 40 and 41 E. and is part of the CX Field. The proposed action requiring a decision by BLM includes the drilling, completing and producing of 85 federal wells, completing and producing 1 previously drilled federal well and constructing and installing the associated infrastructure serving federal leases within the project area, as well as reclaiming disturbed areas and plugging federal wells when they are no longer needed.

BACKGROUND

This Decision Record/Finding of No Significant Impact (DR/FONSI) supercedes the DR/FONSI that BLM signed on September 16, 2003, approving the Fidelity proposal described above. In the September 16, 2003, decision, BLM approved the Applications for Permit to Drill (APDs) for the 85 federal wells and plans for the associated infrastructure. Shortly thereafter, Fidelity drilled all 85 federal wells, 68 private wells, 20 state wells, and installed components of the associated infrastructure in the POD project area.

On December 9, 2003, the BLM State Director stayed Fidelity's operations for the development and production of federal leases in the Badger Hills project area, and ordered a new EA prepared to address issues raised in four requests for State Director Review. No federal wells are operating or producing in the Badger Hills project area because of this stay order. As of February 1, 2004, 19 state wells and 63 private wells are in production. The new EA has been completed and is the basis for this DR/FONSI.

DECISION

Based upon the analysis of potential environmental impacts described in the *February, 2004 Fidelity Tongue River-Badger Hills Project Plan of Development Environmental Assessment* (EA) (Attachment 1), it is my decision to select Alternative C from the EA and approve the Plan of Development (POD) dated June 13, 2003, submitted by Fidelity.

Approved project components include:

- Construction, drilling, completion, production, routine operation and reclamation of up to 85 federal coal bed natural gas wells on 18 locations and one linear right-of-way for buried flowlines and power line.

- Establish production from an existing federal CBNG well.

- Construction, use and reclamation of sites in Section 25 and 35, Township 9 South, Range 40 East for Compressor Stations and Metering.

- Placement of surface facilities such as batteries, meter houses and other equipment associated with federal wells needed to produce coal bed natural gas for the life of the project.

- All methods of disposal for water produced from federal wells; the construction, use and reclamation of produced water storage reservoirs in Section 25 and 35, Township 9 South, Range 40 East and the use of Land Application Disposal in Sections 34 and 35, Township 9 South, Range 40 East which are all located on private surface.

- Access via 27 miles of improved and unimproved roads (of which 4.4 miles will be upgraded) is authorized to allow the operator access to its individual leases as described in the Proposed Action.

- Measurement of gas produced by federal wells at facilities located off of federal leases.

Approval of the Fidelity POD which includes a Water Management Plan, a Wildlife Monitoring and Protection Plan, a Land Application Plan and a Reclamation Plan, is subject to the operator implementing and complying with all the Conditions of Approval (COA) listed in Attachment 2. These conditions of approval were derived from the additional mitigating measures listed in Alternative C of the EA and contain all practicable means to avoid or minimize environmental harm. These conditions of approval are either a result of the impact analysis or adopted from the MT Statewide FEIS, 2003.

This decision is effective immediately. Actions may begin immediately in accordance with any restrictions or constraints imposed by lease stipulations, permit conditions of approval or surface owner agreements.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Based on the effects presented in the EA, and the discussion below, I have determined that Alternative C—*Fidelity Plan of Development with Additional Mitigation*, which I have selected, will not have significant effects on the human environment. For this reason, no environmental impact statement needs to be prepared.

MANAGEMENT CONSIDERATIONS/RATIONALE FOR THE DECISION

My FONSI determination on the Fidelity POD is based upon a number of factors, including careful consideration of the relevant issues listed in the EA.

Public Involvement

The Miles City Field Office completed the Montana Statewide Final Oil and EIS and Amendment of the Powder River and Billings RMPs on April 30, 2003 (MT EIS). One result of this effort is an extensive database of public input on CBNG. Issues, comments and concerns obtained from the public throughout the EIS scoping, comment and protest period were all used to review Fidelity's POD and prepare the EA.

A specific opportunity for public involvement on Fidelity's proposal was provided via the Application for Permit to Drill (APD) posting period (43CFR 3162.3-1(g)). This 30 day public comment period started on June 13, 2003. Copies of Fidelity's APDs were provided to the Northern Plains Resource Council and

to Native Action. However, no comments were received from the public or the Tribes during the 30-day posting period or subsequent to the 30-day posting period before the initial approval of the POD on September 16, 2003.

After the initial approval of the POD on September 16, 2003, four requests for State Director Review (SDR) of the Decision Record and FONSI were submitted in accordance with 43 CFR 3165.3(b). These four SDR requests provided additional, site specific, public input on a variety of issues. The State Director's decision of December 9, 2003, remanded the case back to the Miles City Field Manager for further analysis of the issues raised by the appealing parties. I have completed consideration of the issues and concerns raised by the parties that requested a SDR and incorporated the findings into the attached EA and this Decision Record/FONSI.

Consistency with Land Use Plan

This decision is in conformance with the overall planning direction for the area. The Powder River RMP, as amended, required that "standard" and "special" protective stipulations and mitigation measures in the form of conditions of approval be applied to prevent undue adverse impacts to other resource values. Standard and special protective measures were identified and incorporated into the BLM Preferred Alternative to reduce or eliminate impacts.

Surface Water Quality

BLM's approval of the Fidelity POD will not significantly impact water quality. The discharge of produced CBNG water will be conducted under an approved State MPDES permit that contains the necessary discharge limits to protect water quality for beneficial use. Using the predicted sodium adsorption ratio (SAR) as the primary water quality indicator, the analysis in EA Table 4.2.6-4 shows that under a range of flow conditions, from the high mean monthly flow to the 7Q10, the water quality in the Tongue River will meet the Montana water quality requirements for an SAR value of less than 4.5 (EA Table 4.2.6-2).

At the Birney Day School monitoring station, just upstream of the Northern Cheyenne Reservation, even during the 7Q10 flow levels, water quality is predicted to not exceed the Northern Cheyenne water quality standard of 2.0 for SAR (EA Table 4.2.6-4 showing a predicted SAR value of 1.90 at the 7Q10 flow).

Drawdown of Groundwater

The production of federal gas under the selected alternative will not result in significant impacts from the drawdown of groundwater. As discussed in the EA under Section 4.3.6.1, the number of water sources in the potential drawdown zone under the BLM-approved POD in Alternative C will only potentially increase by four domestic or stock wells when compared to Alternative A.

While these water sources could experience reduced yields, the operator is required by the State and the BLM to offer mitigation agreements to the owners of any spring or well adversely impacted. These agreements will apply to the owners of these wells and springs whether the impact to their use is due to decreased yield, the production of methane (methane migration), or a change in water quality. The agreements are included as part of the approved POD.

As discussed in the EA under Section 4.2.6.1, the replacement of water required by these agreements is anticipated to take the form of reconfiguring existing wells, re-drilling wells or drilling new wells. These actions will be effective in replacing water sources and preventing significant impacts since the drawdown will likely be confined to the coal seam aquifers, and any lost water sources will be replaced

with a permanent source before termination of the agreement. Impacts are not expected after cessation of CBNG development since the aquifer will be in the recovery phase with rising groundwater levels.

Produced Water Storage

Fidelity's plan for the construction of impoundments to store produced water includes lining of the impoundments with a compacted clay liner. This liner is expected to prevent leakage and associated impacts to groundwater resources or adjacent soils and vegetation. I have included additional monitoring requirements, including the installation of monitoring wells, in the selected alternative in order to verify the performance of the impoundment liners and provide for a means to identify the need for remedial action (EA Section 4.4.6). The operator's plan for these impoundments in conjunction with the BLM-required monitoring to assure liner performance will prevent significant impacts.

Land Application of Produced Water

Impacts from land application of produced water on vegetation, soils and alluvial ground water will not be significant. Application of produced water to the irrigation areas in accordance with Fidelity's plan will not adversely affect groundwater because infiltrating water will be managed to prevent saturated flow below the rooting zone that could recharge to shallow aquifers. Water will be applied to the irrigation areas at rates that would infiltrate vertically through the least permeable of the underlying units. This will ensure that the applied water will flow vertically rather than flowing overland into adjacent surface water. (EA Section 4.4.6.1). In order to ensure irrigation will not impact groundwater, I have included additional monitoring requirements in the selected alternative in order to verify the performance of the land application system and provide for a means to identify the need for remedial action. The operator's plan for land application of produced water, submitted with the POD, together with the BLM-required monitoring used to verify application rates will prevent significant impacts to vegetation, soils and alluvial groundwater.

Wildlife Resources

The only Threatened or Endangered species or habitat in the project area is the Bald Eagle. The nearest federal mineral activity that will occur is about one mile from an active Bald Eagle nest (EA Section 3.9.1). Installation of the raptor protection devices, as included in Fidelity's POD, will reduce the potential for electrocution of eagles and other raptors. The mitigating measures required to protect bald eagles are in the Biological Opinion for this project provided by the Fish and Wildlife Service, and are required to be implemented as a condition of approval (Biological Opinion, February 3, 2004). Therefore, the impacts to T&E listed species will not be significant.

There are no known grouse leks within the project area boundary; therefore, impacts to sage grouse will not be significant.

For other wildlife species, the timing restrictions and avoidance measures in Fidelity's wildlife monitoring and protection plan, submitted with the POD, will protect wildlife resources including, but not limited to, big game winter range, raptor nest territories and sage and sharp-tailed grouse leks and nesting habitat by managing and restricting activities during critical time periods to avoid disturbance on important habitats and during breeding and nesting seasons (EA Section 4.3.8.1).

As a result of the above wildlife protective measures, I conclude that impacts to area wildlife from approval of Fidelity's POD will not be significant.

Air Quality

The air quality impact analysis (EA Section 4.4.1) did not identify any pollutant concentrations that will be in violation of the applicable air quality standards from Fidelity's POD. Compressor operations conducted under the terms of the State air quality permit, plus the conditions of approval I am requiring to control fugitive dust emissions from construction and operation activities under the selected alternative, will reduce impacts to air quality and therefore prevent significant impacts to air quality.

Specific analysis was completed for the EA to analyze the pollutant generated from CBNG operations most likely to result in a violation of standards. In addition, the analysis from the MT EIS No Action Alternative was used to predict other pollutant concentrations and air quality related values from Fidelity's proposed POD. Use of the MT EIS for this purpose was reasonable due to similarity in the number of wells involved in each scenario (178 for Fidelity and 515 in the MT EIS). The MT EIS results concluded all analyzed pollutants visibility impairment and atmospheric deposition levels were well below established standards and thresholds of concern. These results are representative of what will occur under the Fidelity POD. Therefore, it is concluded that impacts to air quality will not be significant.

Cultural Resources

A cultural resource survey did not identify any historic properties on federal surface or minerals that will be impacted by Fidelity's POD (EA Section 4.4.2.1). The SHPO concurred with BLM's determination that no historic properties will be affected by the BLM approval of the Fidelity POD (EA Section 1.6).

In regards to cultural resources that are important to Native Americans, the BLM directed contractors conducting the inventory of the POD area to pay particular attention to traditional cultural concerns such as springs, homesteads, and plant communities. These features had been previously identified as important to Native Americans during consultation on the MT EIS. The inventory results for the POD did not identify any such features in the project area. The inventory results were provided to the Northern Cheyenne Tribe along with an invitation to comment on the survey results. No specific comments were provided by the Tribe suggesting the presence of locations of traditional cultural importance within the project area that would be affected.

Based on the above inventory results and conditions of approval, I conclude that impacts to cultural resources will not be significant from the selected alternative.

Social and Economic Conditions

Approval of Fidelity's POD will not create a significant burden on area services, infrastructure or substantially change the level of employment (EA Section 4.4.4.1). The EA (Section 4.4.4) did not identify any disproportionate impacts on low income or minority communities and there are no environmental justice issues that will be created by approval of Fidelity's POD.

Compressors will be located at least one mile from any occupied dwelling so effects on area residences will not be significant.

Approval of the Fidelity POD will prevent the drainage of federal minerals by adjacent private or state wells. This will protect taxpayer resources and provide revenue to federal, state and county governments.

Cumulative Impacts

The 178 combined private, state and federal wells in the project are considerably fewer than the 26,000 wells that were predicted in the MT EIS over the next 20 years. The activity is well within the scope of that analyzed in the 2003 MT EIS and supplemental analysis is not necessary.

The analysis in the attached EA did not identify any significant impacts that will result from approval of the Fidelity POD in combination with the cumulative actions listed in EA Section 2.4.

Resources for which cumulative impacts are most likely to extend outside the project area include air and water quality. The impact analysis in the EA considered these cumulative actions as part of the respective modeling efforts.

Air modeling considered the air quality effects of cumulative actions. By using the MT and WY EIS air modeling results, the air analysis considered the potential effect of 515 producing wells in Montana and over 900 producing wells in Wyoming. This analysis covers actions that are relevant to the cumulative impacts of developing the 178 wells in the Fidelity POD and did not identify any significant impacts.

Water quality modeling looked at discharges from the private and state wells, plus the discharge of water from the Coal Creek POD. The cumulative effects of all these discharges are summarized in Table 4.2.6-4. The resulting water quality will not exceed any surface water standards for EC or SAR; therefore, the cumulative impact will not be significant.

COMPLIANCE AND MONITORING

The BLM and Fidelity will provide qualified representatives on the ground during and following construction to validate construction, reclamation, and other approved compliance checks commensurate with the provisions of this Decision Record. The MT EIS (pages MON-7 and MON-8) describes the type of actions that will occur under BLM's inspection and enforcement program to ensure the Badger Hills POD development and operations are conducted according to the provisions of Alternative C. Additional monitoring described in the MT EIS (Monitoring Appendix) concerning surface water quality, regional groundwater and air quality is tied to established programs operated by the U.S. Geological Survey, Montana Bureau of Mines and Geology, Montana Department of Environmental Quality and BLM.

Fidelity has committed to monitoring activity in their proposal; including:

- Raptor nest success and productivity
- Sharp-tailed grouse leks within two miles of development
- Bald eagle nest success and productivity
- Potential mountain plover habitat for the occurrence of plovers
- Sage grouse leks within two miles of development
- Cooperation with Montana Fish Wildlife and Parks and BLM biologists in their monitoring of big game use of crucial winter ranges
- Irrigation at land application disposal sites to ensure no runoff occurs
- Evaluation of soil chemistry, water quality and vegetation performance at land application sites to insure sodic water conditions are mitigated by intensive management measures
- Produced water storage reservoirs for signs of seepage and structural stability
- Domestic water wells and springs included in the cone of influence to determine if impacts are occurring that require mitigation
- Existing and new disturbed areas for invasions of noxious weeds

Alternative C requires Fidelity to undertake additional monitoring efforts; including:

- Designated reference wells for water quality characterization of each coal seam developed
- Installation and monitoring of wells to determine fate of water stored in produced water storage reservoirs and to detect leakage and take corrective action if lining is not adequate
- Produced water storage reservoir effluent limitations, other conditions and self-monitoring requirements according to Section I.B of the Montana Department of Environmental Quality DRAFT General Discharge Permit Coal Bed Methane Produced Water to ensure that adequate reclamation of these sites would be attainable following their use
- Installation and monitoring of wells to determine fate of water applied at irrigation sites to determine if shallow aquifers are affected and take corrective action if negative impacts occur
- Managed irrigation sites after irrigation stops to address adverse impacts until surface owner approved productivity levels have been established

Appropriate remedial action will be taken by Fidelity in the event unacceptable impacts are identified during the life of the project.

APPEAL PROCESS

You have the right to request a State Director Review (SDR) of this decision and the Conditions of Approval pursuant to 43 CFR 3165.3(b). An SDR request, including all supporting documentation must be filed with the Montana State Office, State Director (MT-920) at P. O. Box 36800, Billings, Montana 59107 within 20 business days of your receipt of this decision.

If adversely affected by the State Director's decision, it can be further appealed to the Interior Board of Land Appeals (IBLA) pursuant to 43 CFR 3165.4, 43 CFR 4.411, and 43 CFR 4.413. Should you fail to timely request an SDR, or after receiving the State Director's decision, fail to timely file an appeal with the IBLA, no further administrative review of this decision will be possible.

David M Selmay

Field Manager
Miles City Field Office

2/9/04

Date

Attachments:

1 – POD Conditions of Approval to Fidelity Badger Hills POD
2 - Environmental Assessment MT-020-2004-0134, Fidelity Badger Hills

CONDITIONS OF APPROVAL

General

1. The first well drilled to each targeted coal zone will be designated as the POD reference well. Designated reference wells must have the ability to be sampled at the wellhead. Water quality samples must be collected by the operator and submitted for analysis using MDEQ NPDES criteria within 60 days of initial water production. Results of the analysis must be submitted to the MCFO-BLM Authorized Officer as soon as they become available.

2. A pre-construction field meeting must be conducted prior to beginning any construction activities approved under this POD. The operator must contact the BLM Authorized Officer, (406-233-3647) at least 4 days prior to beginning operations so that the meeting can be scheduled. The operator is responsible for having all contractors present (dirt contractors, drilling contractor, pipeline contractor, project oversight personnel, etc.) including the overall field operations superintendent and for providing all contractors copies of the approved POD, project map and BLM Conditions of Approval pertinent to the work that each would be doing.

3. The operator must submit a Sundry Notice (Form 3160-5) to BLM for approval prior to construction of any new surface disturbing activities related to federal leases that are not specifically addressed in the approved APD or POD Surface Use Plan.

4. If any cultural values (sites, artifacts, human remains, etc.) are observed during operation of this lease/permit/right-of-way, they are to be left intact and the Miles City Field Manager notified. The authorized officer will conduct an evaluation of the cultural values to establish appropriate mitigation, salvage or treatment. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials and contact the authorized BLM officer. Within five working days, the AO will inform the operator as to:
   - Whether the materials appear eligible for the National Register of Historic Places;
   - The mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
   - A time-frame for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction measures.

5. If paleontological resources, either large or conspicuous and/or a significant scientific value are discovered during construction, the find must be reported to the Authorized Officer immediately. Construction must be suspended within 250 feet of said find. An evaluation of the paleontological discovery will be made by a BLM approved professional paleontologist within five (5) working days, weather permitting, to determine the appropriate action(s) to prevent the potential loss of any significant paleontological values. Operations within 250 feet of such a discovery must not be resumed until written authorization to proceed is issued by the Authorized Officer. The applicant must bear the cost of any required paleontological appraisals, surface collection of fossils, or salvage of any large conspicuous fossils of significant scientific interest discovered during the operation.

6. Prior to the use of pesticides on public land, the holder must obtain from the BLM authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers and any other information deemed necessary by the authorized officer to such use. Disturbed areas must be monitored annually for the presence of noxious weeds from June through August. Monitoring must begin prior to disturbance.

7. Fidelity employees and subcontractors will be prohibited from possessing firearms on the project.

Drilling

1. A diverter must be installed to control uphole pressures. (BOP equipment is not required)

2. All wait on cement times must be sufficient for the cement to reach 500 psi compressive strength as required by Onshore Oil & Gas Order No. 2.III.B.

3. A minimum of three centralizers must be installed on the production casing and spaced to afford maximum protection of the shallow coals and aquifers.

4. Reserve pits must be adequately fenced during and after drilling operations until pit is reclaimed to effectively keep out wildlife and livestock. Adequate fencing, in lieu of more stringent requirements by the surface owner, is defined as follows:
   - Construction materials must consist of steel or wood posts. Three or four strand wire (smooth or barbed) fence or hog panel (16-foot length by 50-inch height) or plastic snow fence must be used with connectors such as fence staples, quick-connect clips, hog rings, hose clamps, twisted wire, etc.
   - Construction standards: Posts must be firmly set in ground. If wire is used, it must be taut and evenly spaced, from ground level to top wire, to effectively keep out animals. Hog panels must be tied securely into posts and one another using fence staples, clamps, etc. Plastic snow fencing must be taut and sturdy. Fence must be at least 2 feet from edge of pit, three sides fenced before beginning drilling, the fourth side fenced immediately upon completion of drilling and prior to rig release. Fence must be left up and maintained in adequate condition until pit is closed.

5. The reserve pit must be lined with an impermeable liner if permeable subsurface material is encountered. An impermeable liner is any liner having a permeability less than 10-7 cm/sec. The liner must be installed so that it will not leak and must be chemically compatible with all substances that may be put in the pit. Liners made of any man-made synthetic material must be of sufficient strength and thickness to withstand normal installation and pit use. In gravelly or rocky soils, a suitable bedding material such as sand must be used prior to installing the liner.

6. The reserve pit must be constructed so that at least half of its total volume is below natural ground level.

7. The operator must complete federal CBNG wells (case, cement and under ream) as soon as possible, but no later than 30 days after drilling operations, unless an extension is given by the BLM AO.

8. All waste, other than human waste and drilling fluids, must be contained in a portable trash container and transported to a State approved waste disposal site immediately upon completion of drilling operations. No trash or empty barrels may be placed in the reserve pit or buried on location. All state and local laws and regulations pertaining to disposal of human and solid waste must be complied with.

9. Rat and mouse holes must be filled and compacted from the bottom to the top immediately upon release of the drilling rig from the location. The only fluids/waste materials which are authorized to go into the reserve pit are Resource Conservation and Recovery Act (RCRA) exempt exploration and production wastes. These include:
   - drilling muds & cuttings
   - rigwash
   - excess cement and certain completion & stimulation fluids defined by EPA as exempt

   It does not include drilling rig waste, such as:
   - spent hydraulic fluids
   - used engine oil
   - used oil filter
   - empty cement, drilling mud, or other product sacks
   - empty paint, pipe dope, chemical or other product containers
   - excess chemicals or chemical rinsate

10. Any evidence of non-exempt wastes being put into the reserve pit may result in the BLM Authorized Officer requiring specific testing and closure requirements.

11. Any materials classified as nonexempt hazardous wastes must be disposed of in an EPA approved facility.

12. If these wells are drilled during the fire season (June-October), the operator must take all necessary precautions to ensure that fire hazard is minimized, including but not limited to mowing vegetation on the access routes and well sites and keeping fire fighting equipment readily available when drilling.

<u>Access</u>

1. Access roads, including drainage control, must be improved and maintained as necessary or as directed by the BLM Authorized Officer to prevent soil erosion and to provide for safe and environmentally-sound access.

2. Vehicle travel on unimproved two-track roads is prohibited during periods of inclement weather or spring thaw when the possibility exists for excessive surface resource damage such as creating ruts in excess of 4 inches or causing vehicles to travel outside two-track roadway. This applies to pre-approval APD/POD vehicle travel such as for surveying and staking, drilling, production operations.

3. Culverts must be placed on channel bottoms on firm, uniform beds, which have been shaped to accept them and aligned parallel to the channel to minimize erosion. Backfill material must be thoroughly compacted. All culverts must be appropriately sized in accordance with standards in BLM Manual 9113.

4. Construction and other project-related traffic is restricted to approved routes. Cross-country vehicle travel is not allowed.

5. Maximum design speed on all operator constructed and maintained roads must not exceed 25 miles per hour.

6. Water or other non-saline dust suppressants with at least 50 percent control efficiency must be applied during well site, battery site and road construction. Dust inhibitors (surfacing materials, non-saline dust suppressants and water) must be used as necessary on unpaved roads that present a fugitive dust

problem. The use of chemical dust suppressants on public surface will require prior approval from the BLM Authorized Officer.

7. The operator must establish, post and enforce speed limits to achieve at least a 65% reduction of fugitive dust emissions from an assumed base speed equal to 40 miles per hour. The operator must administer dust control measures on active access roads, well sites and battery sites.

Well Sites

1. Production facilities (including dikes) must be placed on the cut portion of the location at a minimum of 15 feet from the toe of the back cut unless otherwise approved by the BLM Authorized Officer.

2. Equipment must not be stored on the topsoil stockpiles.

3. A minimum 20-foot undisturbed vegetative border must be maintained between toe-of-fill of pad and/or pit areas and the edge of adjacent drainages, unless otherwise directed by the BLM Authorized Officer.

Flowlines

1. Pipeline trenches must be compacted during backfilling and must be routinely inspected and maintained to ensure proper stabilization and reclamation.

2. Pipeline construction must not block nor change the natural course of any drainage. Pipelines must cross perpendicular to drainages. Pipelines must not be run parallel in drainage bottoms.

Battery Sites

1. Contact Montana Department of Environmental Quality to determine permit requirements before installation of production equipment that has the potential to emit air contaminants. Examples of pertinent well production equipment include fuel-fired equipment (e.g., diesel generators), separators, storage tanks, engines and dehydrators.

2. If these facilities are installed during the fire season (June-October), the operator must take all necessary precautions to ensure that fire hazard is minimized, including but not limited to mowing vegetation on the access route(s) and well location(s), keeping fire fighting equipment readily available when drilling, etc.

3. Production facilities (including dikes) must be placed on the cut portion of the location at a minimum of 15 feet from the toe of the back cut unless otherwise approved by the BLM Authorized Officer.

Produced Water

1. The Operator will install 2 monitoring wells within 50 feet of each impoundment. One well will be installed on each side of the impoundment. These wells will be screened from the lowest elevation in the impoundment to the anticipated high water mark. This is to monitor the effectiveness of the clay lining. These impoundments all have natural clay bottoms, therefore deeper monitoring is not needed. It is not anticipated that these wells will contain any water initially. These wells will be gauged monthly and reported to the BLM authorized officer annually unless water levels change by 1 foot or more, or if water is detected in a previously dry well. If such changes are observed, the BLM authorized officer must be notified within 5 business days and a cause analysis conducted. If adverse monitoring results are recorded, discharge into these impoundments may need to be stopped, the water removed and repairs conducted, prior to the reintroduction of produced water to these impoundments. Monitoring of these wells will continue for the life of the impoundment.

2. The effluent limitations, other conditions and self-monitoring requirements must be met as contained in Section I.B of MDEQ's DRAFT General Discharge Permit Coal Bed Methane Produced Water (see Appendix E of the Badger Hills Hydrology Technical Report). All reporting will be as described in the DRAFT General Discharge Permit, except that reports will be submitted to the BLM rather than to the MDEQ. If adverse monitoring results are recorded, discharge into these impoundments may need to be stopped until a modified Water Management Plan (WMP) which addresses the problem is developed and approved. If the impoundments are removed, the land must be returned to its previous utility and stability.

3. The operator will install one monitoring well approximately 300 feet topographically up-gradient and one monitoring well approximately 300 feet topographically down-gradient from the land application area along Badger Creek. These wells will be screened from 5 feet above to 10 feet below the existing alluvial groundwater table. One monitoring well will also be installed near the irrigation areas on the benches above Badger Creek, between the irrigation areas and the slope leading down to Badger Creek. These wells will be finished above the first major aquatard (shale > 1 ft thick) and shall not be greater than 25 feet in depth. Gauging and sampling of these wells will be conducted quarterly and reported to the BLM authorized officer annually until land application activities cease. Analysis will include EC, TDS, pH and major ions (Na, Ca, Mg, K, HCO_3, SO_4 and Cl). If changes in groundwater levels of greater than 1 foot above baseline conditions (determined prior to initiation of irrigation) are recorded, if water is detected in a previously dry well, if EC increases by greater than 200 μS/cm above baseline EC, if the pH changes by 1 unit, or if the concentration of any other parameter changes by 20% or more, the BLM authorized officer must be notified within 5 business days and a cause analysis conducted. Adverse monitoring results may require the cessation of land application until a revised WMP which addresses the problem is developed and approved.

4. The operator must monitor the managed irrigation sites for soils and vegetation productivity after irrigation with produced water ceases for a year or until monitoring indicates that the impacts of the irrigation have been mitigated, whichever is sooner. Monitoring and data collection will follow the Protocol for Evaluating, Designing, Operating, and Monitoring Managed Irrigation Systems for Coal Bed Natural Gas Produced Water: Tongue River – Badger Hills Project, Bighorn County, Montana (summarized in Appendix 2). Monitoring data must be made available to BLM and the surface owner.

<u>Reclamation</u>

1. Reclamation plans must be submitted to BLM for approval via a Notice of Intent (NOI) Sundry Notice before abandoning individual federal POD facilities. Any deviation from the Surface Reclamation Plan included in the Badger Hills POD must be included at this time. Individual facilities include well locations, pipelines, impoundments, reservoirs, off-channel pits, land application areas, livestock/wildlife watering facilities and batteries.

2. Pit reclamation:
    a. All pit(s) must be emptied of all fluids within 90 days after completion of drilling operations. The pit must be closed properly to assure protection of soil, water and vegetation.
    b. The pit may not be cut or trenched.
    c. Pit mud/sludge material may be buried onsite after the material has dried.
    d. The pit material must be covered with a minimum of 3' of soil

3. The reclamation effort will be evaluated as successful if the previously disturbed area is stabilized, all potential water erosion is effectively controlled and the vegetative stand is established with at least a 70% cover when compared to similar adjacent undisturbed areas.

4. The fluids and mud must be dry in the reserve pit before backfilling and recontouring the pit area. The operator must remediate any subsidence areas that develop from closing a pit. The plastic pit liner (if any) must be cut off below grade and properly disposed of at a state authorized landfill before beginning to recontour the site.

5. Areas of surface disturbance must be ripped or scarified to a depth of at least 12 inches before recontouring and redistributing topsoil. The rippers must not be set more than 24 inches apart.

6. Topsoil must be distributed evenly over the entire recontoured area. Prepare the seedbed by disking to a depth of 4-to-6 inches following the contour. Seed must be drilled on the contour to a depth of one-half inch, followed by cultipaction to compact the seedbed, preventing soil and seed losses

7. Any mulch used for reclamation must to be certified weed free and crimped into the soil.

8. Slopes too steep for machinery may be seeded by hand broadcast with twice the amount of specified seed and raked.

9. Complete fall seeding after September 15 and prior to prolonged ground frost. To be effective, complete spring seeding after the frost has left the ground and prior to May 15.

10. Waterbars must be constructed at least one (1) foot deep, on the contour with approximately two (2) feet of drop per 100 feet of waterbar to ensure drainage and extended into established vegetation. All waterbars are to be constructed with the berm on the downhill side to prevent the soft material from silting in the trench. The initial waterbar should be constructed at the top of the backslope. Subsequent waterbars should follow the following general spacing guidelines:

Slope (percent)	Spacing Interval (feet)
< 2	200
2 – 4	100
4 – 5	75
> 5	50

11. BLM will not release the bond until all disturbed areas associated with the APD/POD have been successfully revegetated (evaluation will be made after the second complete growing season) and has met all other reclamation goals of the surface owner and surface management agency.

12. For bond release approval, a Final Abandonment Notice (with a surface owner release letter on split-estate) must be submitted prior to a final abandonment evaluation by BLM.

13. Soil fertility testing and the addition of soil amendments may be required to stabilize some disturbed lands.

14. The abandonment marker must exhibit the same information required for the well sign. The abandonment marker must be installed when the wells are plugged and consist of a steel plate welded to surface casing 4 feet below ground level.

Right-of-Way Stipulations

1. Except rights-of-way expressly authorizing a road after construction of the facility is completed, the holder must not use the right-of-way as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder.

2. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land must be immediately reported to the Authorized Officer. Holder must suspend all operations in the immediate areas of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery must be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder would be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

3. The holder must comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) must comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (see 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 must be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances must be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

4. The holder must conduct all activities associated with the construction, operation and termination of the right-of-way within the authorized limits of the right-of-way.

5. No construction or routine maintenance activities must be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 2-3 inches deep, the soil must be deemed too wet to adequately support construction equipment.

6. The holder must be responsible for weed control on disturbed areas within the limits of the right-of-way. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations)

7. The holder must seed all disturbed areas, using an agreed upon method suitable for the location. Seeding must be repeated if a satisfactory stand is not obtained as determined by the authorized officer upon evaluation after the following growing season. The holder must seed all disturbed areas with the seed mixture(s) listed below. The seed mixture(s) must be planted in the amounts specified in pounds of pure live seed (PLS)/acre. There must be no primary or secondary noxious weed seed in the seed mixture. Seed must be tested and the viability testing of seed must be done in accordance with State law(s) and within six months prior to purchase. Commercial seed must be either certified or registered seed. The seed mixture container must be tagged in accordance with State law(s) and available for inspection by the authorized officer.

   Seed must be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture must be evenly and uniformly planted over the disturbed area. Smaller/heavier seeds have a tendency to drop to the bottom of the drill and are planted first. The holder must take appropriate measures to ensure this does not occur. Where drilling is not

possible, seed must be broadcast and the area must be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre noted below are to be doubled. The seeding must be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth must not be made before completion of the second growing season after seeding. The Authorized Officer is to be notified a minimum of seven days prior to seeding of the project.

ROW Seed Mixture (Silty or Clayey Ecological Loams)

The combination must include at least four of the following species. Western wheatgrass must be included in the mix. Thickspike wheatgrass may be substituted for wheatgrass only when western wheatgrass is unavailable.

Species of Seed	***(Variety)***	***Common Name***	***Pounds/acre *(PLS)***
Pascopyrum smithii	(Rosanna)	Western wheatgrass	3.00
Pseudoroegneria spicata	(Goldar)	Bluebunch wheatgrass	2.00
Stipa viridula	(Lodom)	Green needlegrass	2.00
Elymus trachycaulus	(Pryor)	Slender wheatgrass	2.00
Stipa comata		Needleandthread	1.00
Bouteloua curtipendula		Sideoats Grama	2.00
Schizachyrium scoparium		Little bluestem	2.00

**Pure Live Seed (PLS) formula: % of purity of seed mixture times % germination of seed mixture = portion of seed mixture that is PLS.*

8. Holder must remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate re-growth of vegetation.

9. The grant is issued subject to the holder's compliance with the mitigations set forth in the application and plan of development.

10. Prior to any discharge, hydrostatic testing water must be tested and processed, if necessary, to ensure that the water meets local, State or Federal water quality standards. Prior to discharge of hydrostatic testing water from the pipeline, the holder must design and install a suitable energy dissipater at the outlets and design and install suitable channel protection structures necessary to ensure that there will be no erosion or scouring of natural channels within the affected watershed as a result of such discharge. The holder will be held responsible for any erosion or scouring resulting from such discharge. Sandbags, rock, or other materials or objects installed must be removed from the site upon completion of hydrostatic testing.

11. During conditions of extreme fire danger, operations must be limited or suspended in specific areas, or additional measures may be required by the Authorized Officer.